Cisco PowerVu Network Centre Version 11.5

The Cisco® PowerVu® Network Centre (PNC) is the heart of the PowerVu product family. The highly reliable PNC is a sophisticated, yet easy-to-use system that provides network management, security, decoder management, and advanced revenue protection.

The PNC is designed to meet the analog and digital content distribution needs of programmers, private networks, other network operators, and users who need to automatically control multiple encoders in a redundant system to securely transmit video, audio, and data to a large receiver population.

The PNC 11.5 supports the Digital Content Manager (DCM) Statmux controller, along with the D9036 URC Statmux System. This release also supports additional backup encoders, allowing up to 18 backup encoders per PNC signal.

Network Management

Control all PowerVu video, audio, data, and other ancillary PowerVu services of your uplink. The PNC enables you to configure and control your PowerVu network devices, including PowerVu Encoders, Multiplexers, and Advanced Modulators.

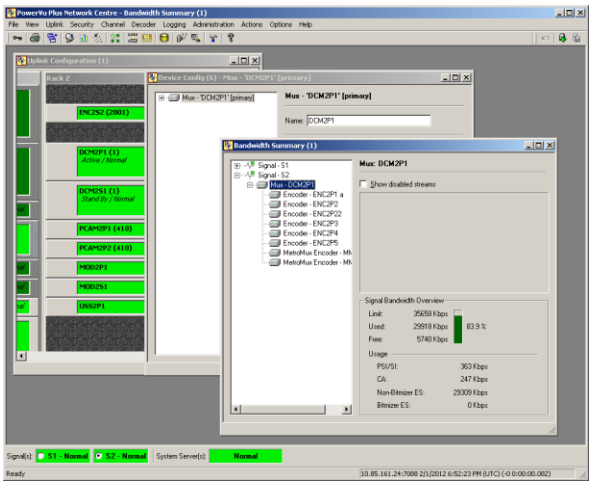
Security

Control who is authorized for your programs. Conditional access and encryption help ensure that your transmissions are secure. The PNC offers a reliable, commercial security system.

Decoder Management

Control where your information is being received. The PNC addresses all PowerVu receivers in the field. You will have all of the information at your fingertips necessary to address PowerVu decoders for specific service authorization

Figure 1. Cisco PowerVu Network Centre Sample Screen



Key Features and Benefits

- Standard Definition (SD) and High Definition (HD) Encoder support
- AVC Encoder (i.e., D9034, D9054, or D9036) web GUI device launch and configuration
- Support for D9036 URC Statmux System
- Support for Digital Content Manager, including Statmux controller
- Support for PowerVu Conditional Access Manager
- MPEG-2/DVB compatibility
- Ability to send email alerts for user-defined system alarms
- Reliable automatic redundancy switching upon failure of devices
- Support for Digital Program Insertion SCTE-35 messages
- Optional Ad Insertion Tier support for targeted SCTE-35 delivery
- Control over all PowerVu decoder authorizations
- Broadcast flag to control unwanted content distribution
- Control of Program Receiver and Multiple Decryption Receiver (MDR) analog/digital decoder outputs
- Effective management of bandwidth allocation
- Expandable N:M encoder configuration with N <= 18 and N+M <= 36
- Advanced decoder grouping and searching capabilities
- Available interface to the PowerVu Connect system, which allows for automatic PowerVu decoder deployment and authorization
- User-friendly Graphical User Interface (GUI)
- MetroMux software (for re-multiplexing of MPEG-2 and MPEG-4 part 10 (H.264) video, audio, and a variety of additional services)
- Network Management & Decoder Control integrated with Conditional Access & Encryption all-in-one system
- Decoder database Application Programming Interface (API)
- Optional Disaster Recovery and/or Data Replication software

- Optional Programmer Segmentation, enabling service providers to provide PNC access for programmers
- Visual IRD Management
- Optional D9858 Advanced Receiver Transcoder control
- Optional Live Event Controller support
- Optional Simulcrypt support

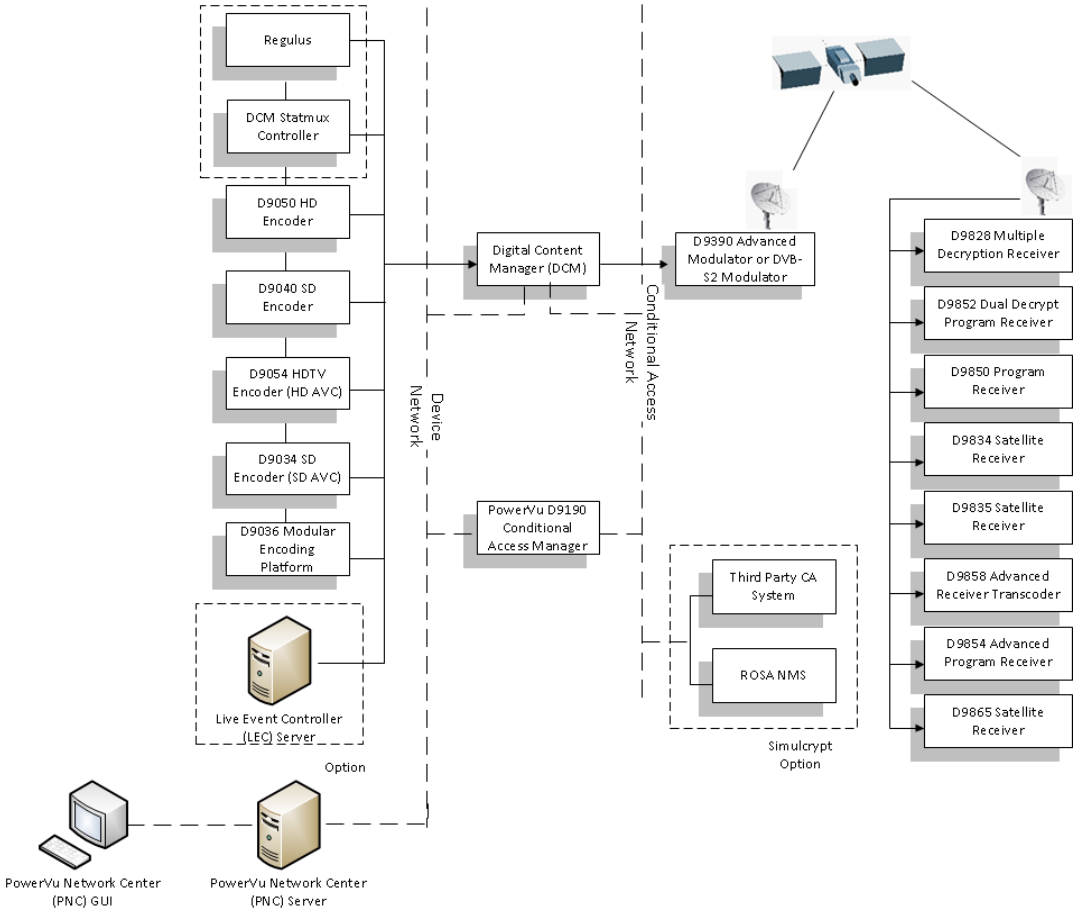
Product Specifications

Table 1. Product Specifications

Functions	Features
System/Network Management	Industry Standards: MPEG-2 and DVB®, AVC (H.264) Commercial Conditional Access Scrambling: DES, DVB or Simulcrypt Automatic Redundancy: N:M with N<=18 and N+M<=36 Number of signals: 4 Encoder Control 4:2:0/4:2:2 Video Encoding: SD and HD Closed-loop Statistical Multiplexing: SD and HD Dual-pass Encoding MPEG-1, DolbyTM ,MPEG-2 Digital Audio Encoding: SD and HD Dolby E Passthrough: HD Multiplexer Control PowerVu Data support: Synchronous and Asynchronous Advanced Modulator Control PowerVu Subtitling and VBI support DVB Subtitling and DVB WST support Digital Program Insertion support Email Alerts for Alarms Disaster Recovery: Optional Data Replication: Optional Network Time Protocol Synchronization Encoder Pre-filters: Spatial, temporal
System Control Functions	Program/Event scheduling Bandwidth Management MetroMux software Password Privilege system Diagnostic Logs Transaction Logs Automatic/Manual Database Backups
Computer and Remote Access	Client/Server Architecture Server: Netra T5220 Client Interface: Windows 7 Multi-user remote access: 5 users Remote Access: Satellite Modem, ISDN, LAN or POTS SNMP interface for monitoring: Optional PowerVu Connect interface: For automatic decoder deployment and fulfillment (optional)
Decoder Control Functions	Decoder Database: 250,000 ECM and EMM generation Tier Assignment: 256 Blackout/Spotlight Codes Fingerprint Trigger Broadcast Flag (ATSC A/65B) Force Tuning

Functions	Features
	Homing Channel
	Remote Control Outputs
	Service Replacement: Scheduled, CA and cue-trigger based
	Decoder Output Controls
	Satellite code download to decoders
	Decoder lock-out of front panel
	Decoder group/search capability
	Visual IRD Management, In-band control
	Live Event Controller

Figure 2. PowerVu Multi-Channel Distribution System



Key PNC Options

Live Event Controller

The Cisco Live Event Controller (LEC) server is used by programmers and broadcasters to perform uplink-commanded, dynamic channel tuning for receivers. It provides the capability for programmers and broadcasters to manage the access rights of services based on event groups. Users define the event groups, which can be used as decoder search criteria. Decoders can be tuned to events with dynamic start/end time via a button push. This feature provides users with an extra level of flexibility in managing services.

The LEC computer option is a server with an ASI card that interfaces with the MUX ASI card to pass through the event control data. It also interfaces with the PNC and a General Purpose Input (GPI) module via Ethernet connections.

The PNC monitors the LEC application. Network Services and event group data are automatically coordinated between the PNC and LEC. Channel tuning events are imported via an easy-to-use web interface, and are triggered based on time or GPI triggers (button). Event control data can be targeted to different groups of receivers. Receivers with LEC support are tuned to a designated channel based on the event control data instructions.

Disaster Recovery and Data Replication – Revenue protection

Disaster Recovery is an advanced PowerVu system option that facilitates automatic service recovery in the event of unforeseen, critical failures in the transmission link that may occur at the satellite, transponder, uplink site, or downlink site. Optionally, the network can be configured to recover from periodic sun outages. Disaster Recovery facilitates the resumption of normal operation on a pre-defined alternate signal source should a disaster occur. This is done by allowing the operator to pre-define potential recovery locations, criteria for disaster, and which receivers will participate in disaster recovery.

Data replication allows the broadcaster/programmer to have a fully configured standby uplink network and PNC control system at an alternate site. The database for all decoder configurations is replicated on the two PNC systems, ensuring that any major failure at the uplink network site can be overcome by switching to the alternate site. The replication of configuration information helps ensure database consistency and minimum delay in the restoration of all services.

SNMP Agent – Alarm and status monitoring

The PNC can be monitored in third party Network Monitoring Systems (NMS) via the SNMP protocol. This allows broadcasters and programmers to add the PowerVu system to their existing NMS installation, simplifying fault discovery and resolution procedures. (Note: The SNMP Agent requires a Sun Blade, Sun Fire server, or Netra 5220.)

Warm Standby Server – Backup PNC that's always up to date

For installations without duplicate uplink network sites, PowerVu system users can choose to install a backup PNC for their uplink network to guard against PNC failure scenarios. This Warm Standby Server uses Data Replication technology to ensure that the co-located secondary PNC has a duplicate image of the primary PNC configuration, including all system configuration and decoder authorization information. In the event of a failure of the primary PNC, technical personnel can switch to the secondary PNC and avoid reconfiguring the system or missing previously scheduled events.

Ordering Information

Table 2. Ordering Information

Description	Part Number
PNC Rackmount Server HW Platform – NetraT5220	**4042092**
PNC Server Software – PNC 11.5	**4044381**
PNC External Tape Drive	**4042509**
PNC RS-232 Concentrator	**4037889**

Description	Part Number
Keyboard, Rackmount, 1ru w/Touch Pad, PS/2	4025212
PNC GUI Software CD – PNC 11.5	4044383
PNC Programmer GUI Software CD – PNC 11.5	4044383
Options	
Enhanced software with DES scrambling (for primary PNC) for use with D9140	4021433
Enhanced software with DES scrambling (for standby PNC) for use with D9140	4040054
Enhanced software with DVB scrambling (for primary PNC) for use with D9140	4021434
Enhanced software with DVB scrambling (for standby PNC) for use with D9140	4040055
Field/Factory – PowerVu Standard CA DES Option (For Primary PNC)	4042171
Field/Factory – PowerVu Standard CA DES Option (For Standby PNC)	4042173
Field/Factory – PowerVu Standard CA DVB Option (For Primary PNC)	4043284
Field/Factory – PowerVu Standard CA DVB Option (For Standby PNC)	4043286
Field/Factory – PowerVu Simulcrypt CA Option (For Primary PNC)	4042077
Field/Factory – PowerVu Simulcrypt CA Option (For Standby PNC)	4042086
Cue trigger option (for primary PNC)	4021431
Cue trigger option (for standby PNC)	4040053
Simple profile DPI (for primary PNC)	4021435
Simple profile DPI (for standby PNC)	4040056
PNC statmux software option (for primary PNC)	4021430
PNC statmux software option (for standby PNC)	4040052
Disaster recovery option (for primary PNC)	4021436
Disaster recovery option (for standby PNC)	4040057
Data replication option (for primary PNC)	4021437
Data replication option (for standby PNC)	4040058
SNMP agent option (for primary PNC)	4024578
SNMP agent option (for standby PNC)	4040059
Metromux option (for primary PNC)	4021428
Metromux option (for standby PNC)	4040051
Live Event Controller option (for both primary and standby PNC)	4038986
Transcoder control option (for primary PNC)	4042073
Transcoder control option (for standby PNC)	4042082
Ad insertion tier option (for primary PNC)	4042075
Ad insertion tier option (for standby PNC)	4042084
Warm standby server	4009351
Cold standby server	4009630
Upgrades	
PowerVu Network Centre upgrade	801-564
PNC server hardware upgrade	4013786

The Warm Standby Server option includes a second PNC hardware and software configuration with the Data Replication option (4006903). Warm Standby Servers must be installed and configured by Cisco customer support.

Service and Support

Using the Cisco Lifecycle Services approach, Cisco and its partners provide a broad portfolio of end-to-end services and support that can help increase your network's business value and return on investment. This approach defines the minimum set of activities needed by technology and by network complexity to help you successfully deploy and operate Cisco technologies and optimize their performance throughout the lifecycle of your network.

For More Information

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